What is Claimed Is:

1. An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated body at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a first interlock structure and the elongated body including a second interlock structure, the first and second interlock structures interlocking to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, and the first and second interlock structures not constraining radial expansion of the implant;

one of the first and second interlock structures including a male interlock structure and the other of the first and second interlock structures including a female interlock structure adapted to receive the male interlock structure when the implant is in the compressed orientation;

the implant including a cell defining region; and

at least a portion of the first interlock structure being positioned within 5 millimeters of the first end of the implant and within 5 millimeters of the cell defining region of the implant.

2. The implant delivery system of claim 1, wherein the implant comprises a stent.

3. The implant delivery system of claim 1, wherein at least a portion of the first interlock structure is positioned within 2 millimeters of the first end of the implant.

4. The implant delivery system of claim 1, wherein the elongated body includes a radiopaque marker positioned adjacent to the implant mounting location, and wherein the marker defines the second interlock structure.

5. The implant delivery system of claim 1, wherein the first end of the implant is a proximal end of the implant.

6. The implant delivery system of claim 1, wherein the implant includes a plurality of separate first interlock structures having at least portions positioned within 5 millimeters of the first end, and wherein the elongated body includes a plurality of second interlock structures for interlocking with the first interlock structures.

7. The implant delivery system of claim 1, wherein the first interlock structure is the male interlock structure and the second interlock structure is the female interlock structure.

8. The implant delivery system of claim 7, wherein the male interlock structure includes an enlargement positioned at the first end of the implant.

9. The implant delivery system of claim 8, wherein the implant includes a plurality of enlargements at the first end of the implant.

10. The implant delivery system of claim 8, wherein the male interlock structure includes a circumferential projection positioned at the first end of the implant.

11. The implant delivery system of claim 10, wherein the implant includes a plurality of the circumferential projections at the first end of the implant.

12. The implant delivery system of claim 1, wherein the first interlock structure is the female interlock structure and the second interlock structure is the male interlock structure.

13. The implant delivery system of claim 12, wherein the implant includes struts, and the female interlock structure includes a post opening defined through at least one of the struts.

14. The implant delivery system of claim 13, wherein the implant includes a plurality of the post openings.

15. The implant delivery system of claim 13, wherein the implant includes struts, and the female interlock structure includes an opening between the struts.

16. The implant delivery system of claim 1, wherein the first interlock structure is within 2 millimeters of the cell defining region of the implant.

17. The implant delivery system of claim 1, wherein the first interlock structure is within 1 millimeter of the cell defining region of the implant.

18. The implant delivery system of claim 1, wherein the elongated member extends completely through the implant.

19. The implant delivery system of claim 1, wherein the cell defining region of the implant includes a boundary defined by an inner diameter and an outer diameter of the implant, and wherein the first interlock structure stays generally within the boundary after the implant has been deployed.

20. The implant delivery system of claim 1, wherein the first interlock structure is not radially outwardly biased relative to the cell defining region of the implant.

21. An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated body at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a cell defining region, the implant also including a plurality of struts at least some of which have terminal ends defining the first end of the implant, the implant also including at least two enlargements positioned at the terminal ends of the struts, the enlargements being located within 5 millimeters of the cell defining region of the implant; and

the elongated body including receptacles that receive the enlargements to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath.

22. The implant delivery system of claim 21, wherein the elongated body includes a radiopaque marker positioned adjacent to the implant mounting location, and wherein the marker defines the receptacles.

23. The implant delivery system of claim 21, wherein the first end of the implant is a proximal end of the implant.

24. The implant delivery system of claim 21, wherein the enlargements are within 2 millimeters of the cell defining region of the implant.

25. The implant delivery system of claim 21, wherein the enlargements are within 1 millimeter of the cell defining region of the implant.

26. The implant delivery system of claim 21, wherein the elongated member extends completely through the implant.

27. The implant delivery system of claim 21, wherein the cell defining region of the implant includes a boundary defined by an inner diameter and an outer diameter of the implant, and wherein the enlargements stay generally within the boundary after the implant has been deployed.

28. The implant delivery system of claim 21, wherein the enlargements are not radially outwardly biased relative to the cell defining region of the implant.

29. An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated body at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a cell defining region and first and second ends, the implant also including at least two female male interlock

structures positioned within 5 millimeters of the first end of the implant and within 5 millimeters of the cell defining region of the implant; and

the elongated body including male interlock structures that are received within the female interlock structures to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, the male and female interlock structures not constraining radial expansion of the implant.

30. The implant delivery system of claim 29, wherein the elongated body includes a radiopaque marker positioned adjacent to the implant mounting location, and wherein the marker includes the male interlock structures.

31. The implant delivery system of claim 29, wherein the first end of the implant is a proximal end of the implant.

32. The implant delivery system of claim 29, wherein the female interlock structures are within 2 millimeters of the cell defining region of the implant.

33. The implant delivery system of claim 29, wherein the female interlock structures are within 1 millimeter of the cell defining region of the implant.

34. The implant delivery system of claim 29, wherein the elongated member extends completely through the implant.

35. An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated body at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

a marker attached to the elongated member, the marker including structure that interlocks with the implant to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath.

36. An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated body at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a first interlock structure and the elongated body including a second interlock structure, the first and second interlock structures interlocking to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, and the first and second interlock structures not constraining radial expansion of the implant;

one of the first and second interlock structures including a male interlock structure and the other of the first and second interlock structures including a female interlock structure adapted to receive the male interlock structure when the implant is in the compressed orientation; and

at least a portion of the first interlock structure being positioned within 5 millimeters of the first end of the implant, and the elongated member extending through the implant at the implant mounting location.

37. The implant delivery system of claim 36, wherein at least a portion of the first interlock structure is positioned within 2 millimeters of the first end of the implant.

38. An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated body at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a first interlock structure and the elongated body including a second interlock structure, the first and second interlock structures interlocking to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, and the first and second interlock structures not constraining radial expansion of the implant;

one of the first and second interlock structures including a male interlock structure and the other of the first and second interlock structures including a female interlock structure adapted to receive the male interlock structure when the implant is in the compressed orientation;

the implant including a cell defining region that includes a boundary defined by an inner diameter and an outer diameter of the

implant, the first interlock structure being configured to stay generally within the boundary after the implant has been deployed; and

at least a portion of the first interlock structure being positioned within 5 millimeters of the first end of the implant.

39. The implant delivery system of claim 38, wherein at least a portion of the first interlock structure is positioned within 2 millimeters of the first end of the implant.

40. A method for deploying a self-expandable implant with a deployment system, the deployment system including a sheath for holding the implant in a compressed orientation, the implant including first and second ends, the implant also including an interlock surface positioned between inner and outer diameters of the implant, the interlock surface being located within 5 millimeters of the first end of the implant, the method comprising:

generating relative movement between the implant and the sheath to expose the implant;

engaging the interlock surface with a retainer as the implant is exposed to prevent the implant from prematurely exiting the sheath; and

after the implant has been exposed beyond the interlock surface, disengaging the interlock surface from the retainer by self-expanding the implant, wherein the interlock surface disengages from the retainer simultaneous with the expansion of a cell defining portion of the implant.

41. The method of claim 40, wherein the implant is a stent.

42. The method of claim 40, wherein the interlock surface is within 2 millimeters of the first end of the implant.

43. The method of claim 40, wherein the first end of the implant is a proximal end of the implant and the second end of the implant is a distal end of the implant.